

Llys Enfys Care Home - Rainwater Harvesting

Client:	Linc Cymru
Building Type:	68 room extra care facility
Roof:	Shallow pitch membrane with syphonic drainage
Catchment Area:	2,300m ²
Rainwater Apps:	76 WCs for resident and staff use
Sustainability:	BREEAM
Built:	2009



Rainwater Harvesting Requirements

Rainwater harvesting technology was selected to help achieve a high BREEAM rating — one of the conditions of funding the new building. The rainwater demand for WC flushing is very high at 7 flushes per WC per day, 7 days a week, 365 days a year. This demand puts a high load on the system performance and highlights the need of a well designed and specified rainwater recovery solution. With no maintenance downtime available due to round the clock operation Ecozi proposed the flagship rain manager in our product range the HyproDuo. The high annual rainfall in Cardiff combined with the roof area yields up to 1,850m³ of rainwater every year. Due to the site topography, two precast concrete rainwater tanks were required to collect the rainwater from all of the roof area. The system efficiency is estimated at 70% minimising mainswater consumption. Both 23,000L precast tanks are located under vehicular areas and the rainwater is mechanically filtered before entering the rainwater tanks via a 380 micron, stainless steel sieve.



Each 23,000L precast concrete rainwater tank was placed into the final position by truck mounted crane. Only a crushed base is required and no concrete backfill. The precast rainwater tanks saved £3,000 each by eliminating a concrete base and backfill that would have been required with alternative GRP technology. The precast rainwater tanks have a standard surface load rating suitable for a 40T truck, saving additional structural design cost.



The HyproDuo is a state-of-the-art rain manager with a 300L stainless steel intermediary tank. Advanced logic control and premium Wilo pumps provide rainwater direct to WCs upon demand from the plant-room location.



Two rain managers supply approx. 50% of the WCs each. The factory built and tested rain managers require simple piping hook-ups and three electrical plug and socket connections prior to commissioning by Ecozi.



rainwater harvesting systems

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